

Health Care Provider Fact Sheet

Disease Name	Methylglutaric aciduria (3-hydroxy-3-methylglutaryl-CoA lyase deficiency)
Alternate name(s)	Hydroxymethylglutaric aciduria
Acronym	HMG-CoA lyase deficiency
Disease Classification	Organic Acid Disorder
Variants	No
Variant name	N/A
Symptom onset	Infancy (6 months to 2 years)
Symptoms	Persistent vomiting, lethargy, hypotonia, coma, seizures, apnea, hepatomegaly.
Natural history without treatment	Recurrent episodes of acute illness usually in response to fasting or to viral infection. Any episode can lead to death or developmental delay if severe enough.
Natural history with treatment	Normal IQ and development are possible. Severe hypoglycemic episodes may result in seizures and mental retardation.
Treatment	Avoidance of fasting. Low fat, protein and high carbohydrate diet. Cornstarch supplementation. Carnitine supplementation. Intravenous glucose to treat hypoglycemia during crisis episodes.
Emergency Medical Treatment	See sheet from American College of Medical Genetics (attached) or for more information, go to website: http://www.acmg.net/StaticContent/ACT/C5-OH.pdf
Other	Crises consist of severe acidosis and hypoglycemia treated with IV glucose and bicarbonate administration.
Physical phenotype	Possible microcephaly
Inheritance	Autosomal recessive
General population incidence	Rare
Ethnic differences	No
Population	N/A
Ethnic incidence	N/A
Enzyme location	Liver, fibroblasts and leukocytes
Enzyme Function	Catalyzes the final step of leucine degradation and plays a role in ketone formation.
Missing Enzyme	HMG CoA lyase
Metabolite changes	3-hydroxy-3-methylglutaric acid in urine, increased levels of glutaric and adipic acids may be elevated in urine during crisis, notable absence of ketosis.
Prenatal testing	Prenatal testing has been accomplished by analysis of metabolites in maternal urine at 23 weeks. Enzyme is active in amniocytes and prenatal testing should be possible using this method.
MS/MS Profile	N/A
OMIM Link	www.ncbi.nlm.nih.gov/entrez/dispomim.cgi?id=231670
Genetests Link	www.genetests.org
Support Group	Organic Acidemia Association www.oaanews.org Save Babies through Screening Foundation www.savebabies.org Genetic Alliance www.geneticalliance.org

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